

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Stantec
1060 Andrew Drive
Suite 140
West Chester PA 19380

July 31, 2015

Project: Marcus Hook RCRASubmittal Date: 07/16/2015
Group Number: 1577505
PO Number: MARCUS HOOK
State of Sample Origin: PAClient Sample DescriptionMW-17_20150715 Grab Groundwater
MW-28_20150715 Grab Groundwater
MW-30_20150715 Grab Groundwater
MW-40_20150715 Grab Groundwater
MW-86_20150715 Grab Groundwater
Trip Blank WaterLancaster Labs (LL) #7969627
7969628
7969629
7969630
7969631
7969632

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/>.

ELECTRONIC Stantec
COPY TO

Attn: Stephanie Andrews

Respectfully Submitted,



Amek Carter
Specialist

(717) 556-7252

Sample Description: MW-17_20150715 Grab Groundwater
Sunoco M.H. (RCRA)

LL Sample # WW 7969627
LL Group # 1577505
Account # 16657

Project Name: Marcus Hook RCRA

Collected: 07/15/2015 10:33 by C

Stantec

1060 Andrew Drive

Submitted: 07/16/2015 19:00

Suite 140

Reported: 07/31/2015 07:16

West Chester PA 19380

MHR17

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles EPA 624					
10371	Benzene	71-43-2	N.D.	0.9	1
10371	Ethylbenzene	100-41-4	N.D.	0.8	1
10371	Toluene	108-88-3	N.D.	0.8	1
10371	Xylene (total)	1330-20-7	N.D.	0.9	1
GC/MS Semivolatiles EPA 625					
10334	Acenaphthene	83-32-9	N.D.	0.3	1
10334	Anthracene	120-12-7	N.D.	0.2	1
10334	Benzo(a)anthracene	56-55-3	N.D.	0.2	1
10334	Benzo(a)pyrene	50-32-8	N.D.	0.3	1
10334	Di-n-butylphthalate	84-74-2	N.D.	0.5	1
10334	Chrysene	218-01-9	N.D.	0.2	1
10334	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	0.9	1
10334	Fluorene	86-73-7	N.D.	0.3	1
10334	Naphthalene	91-20-3	N.D.	0.2	1
10334	Phenanthrene	85-01-8	N.D.	0.2	1
10334	Phenol	108-95-2	N.D.	0.4	1
Metals SW-846 6010B					
07051	Chromium	7440-47-3	28.9	1.5	1
07055	Lead	7439-92-1	23.6	5.1	1
Wet Chemistry EPA 335.4					
00237	Total Cyanide (water)	57-12-5	N.D.	5.0	1
EPA 1664A					
00612	SGT-HEM (TPH)	n.a.	N.D.	1,400	1

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/16.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10371	BTEX by 624	EPA 624	1	M151982AA	07/18/2015 07:13	Jason M Long	1
10334	SVOCs 625	EPA 625	1	15198WAI625	07/21/2015 11:11	Linda M Hartenstine	1
08108	625 Water Extraction	EPA 625	1	15198WAI625	07/19/2015 20:10	David V Hershey Jr	1
07051	Chromium	SW-846 6010B	1	152081848002	07/28/2015 16:22	Eric L Eby	1
07055	Lead	SW-846 6010B	1	152081848002	07/28/2015 16:22	Eric L Eby	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	152021848002	07/22/2015 09:04	James L Mertz	1

Sample Description: MW-17_20150715 Grab Groundwater
Sunoco M.H. (RCRA)

LL Sample # WW 7969627
LL Group # 1577505
Account # 16657

Project Name: Marcus Hook RCRA

Collected: 07/15/2015 10:33 by C

Stantec
1060 Andrew Drive
Suite 140
West Chester PA 19380

Submitted: 07/16/2015 19:00

Reported: 07/31/2015 07:16

MHR17

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	2	152081848002	07/28/2015 05:46	James L Mertz	1
00237	Total Cyanide (water)	EPA 335.4	1	15205102101B	07/27/2015 12:35	David A Seavey	1
00492	Cyanide Water Distillation	EPA 335.4	1	15205102101B	07/24/2015 13:09	Jonathan T Tomayko	1
00612	SGT-HEM (TPH)	EPA 1664A	1	15209807801A	07/28/2015 17:28	Michelle L Lalli	1

Sample Description: MW-28_20150715 Grab Groundwater
Sunoco M.H. (RCRA)

LL Sample # WW 7969628
LL Group # 1577505
Account # 16657

Project Name: Marcus Hook RCRA

Collected: 07/15/2015 08:44 by C

Stantec

1060 Andrew Drive

Submitted: 07/16/2015 19:00

Suite 140

Reported: 07/31/2015 07:16

West Chester PA 19380

MHR28

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	EPA 624	ug/l	ug/l	
10371	Benzene	71-43-2	N.D.	0.9	1
10371	Ethylbenzene	100-41-4	N.D.	0.8	1
10371	Toluene	108-88-3	N.D.	0.8	1
10371	Xylene (total)	1330-20-7	N.D.	0.9	1
GC/MS	Semivolatiles	EPA 625	ug/l	ug/l	
10334	Acenaphthene	83-32-9	N.D.	0.3	1
10334	Anthracene	120-12-7	N.D.	0.2	1
10334	Benzo(a)anthracene	56-55-3	N.D.	0.2	1
10334	Benzo(a)pyrene	50-32-8	N.D.	0.3	1
10334	Di-n-butylphthalate	84-74-2	N.D.	0.5	1
10334	Chrysene	218-01-9	N.D.	0.2	1
10334	bis(2-Ethylhexyl)phthalate	117-81-7	1 J	0.9	1
10334	Fluorene	86-73-7	N.D.	0.3	1
10334	Naphthalene	91-20-3	N.D.	0.2	1
10334	Phenanthrene	85-01-8	N.D.	0.2	1
10334	Phenol	108-95-2	N.D.	0.4	1
Metals	SW-846 6010B	ug/l	ug/l		
07051	Chromium	7440-47-3	204	1.5	1
07055	Lead	7439-92-1	N.D.	5.1	1
Wet Chemistry	EPA 335.4	ug/l	ug/l		
00237	Total Cyanide (water)	57-12-5	N.D.	5.0	1
	EPA 1664A	ug/l	ug/l		
00612	SGT-HEM (TPH)	n.a.	N.D.	1,400	1

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/16.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10371	BTEX by 624	EPA 624	1	M151982AA	07/18/2015 07:38	Jason M Long	1
10334	SVOCs 625	EPA 625	1	15198WAI625	07/21/2015 11:38	Linda M Hartenstine	1
08108	625 Water Extraction	EPA 625	1	15198WAI625	07/19/2015 20:10	David V Hershey Jr	1
07051	Chromium	SW-846 6010B	1	152081848002	07/28/2015 16:26	Eric L Eby	1
07055	Lead	SW-846 6010B	2	152081848002	07/28/2015 16:26	Eric L Eby	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	152021848002	07/22/2015 09:04	James L Mertz	1

Sample Description: MW-28_20150715 Grab Groundwater
Sunoco M.H. (RCRA)

LL Sample # WW 7969628
LL Group # 1577505
Account # 16657

Project Name: Marcus Hook RCRA

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Reported: 07/31/2015 07:16

MHR28

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	2	152081848002	07/28/2015 05:46	James L Mertz	1
00237	Total Cyanide (water)	EPA 335.4	1	15205102101B	07/27/2015 12:36	David A Seavey	1
00492	Cyanide Water Distillation	EPA 335.4	1	15205102101B	07/24/2015 13:09	Jonathan T Tomayko	1
00612	SGT-HEM (TPH)	EPA 1664A	1	15209807801A	07/28/2015 17:28	Michelle L Lalli	1

Sample Description: MW-30_20150715 Grab Groundwater
Sunoco M.H. (RCRA)

LL Sample # WW 7969629
LL Group # 1577505
Account # 16657

Project Name: Marcus Hook RCRA

Collected: 07/15/2015 09:34 by C

Stantec
1060 Andrew Drive
Suite 140
West Chester PA 19380

Submitted: 07/16/2015 19:00

Reported: 07/31/2015 07:16

MHR30

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles EPA 624					
10371	Benzene	71-43-2	N.D.	0.9	1
10371	Ethylbenzene	100-41-4	N.D.	0.8	1
10371	Toluene	108-88-3	N.D.	0.8	1
10371	Xylene (total)	1330-20-7	N.D.	0.9	1
GC/MS Semivolatiles EPA 625					
10334	Acenaphthene	83-32-9	N.D.	0.3	1
10334	Anthracene	120-12-7	N.D.	0.2	1
10334	Benzo(a)anthracene	56-55-3	N.D.	0.2	1
10334	Benzo(a)pyrene	50-32-8	N.D.	0.3	1
10334	Di-n-butylphthalate	84-74-2	N.D.	0.5	1
10334	Chrysene	218-01-9	N.D.	0.2	1
10334	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	0.9	1
10334	Fluorene	86-73-7	N.D.	0.3	1
10334	Naphthalene	91-20-3	0.7 J	0.2	1
10334	Phenanthrene	85-01-8	N.D.	0.2	1
10334	Phenol	108-95-2	N.D.	0.4	1
Metals SW-846 6010B					
07051	Chromium	7440-47-3	45.2	1.5	1
07055	Lead	7439-92-1	N.D.	5.1	1
Wet Chemistry EPA 335.4					
00237	Total Cyanide (water)	57-12-5	N.D.	5.0	1
EPA 1664A					
00612	SGT-HEM (TPH)	n.a.	N.D.	1,400	1

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/16.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10371	BTEX by 624	EPA 624	1	M151982AA	07/18/2015 08:04	Jason M Long	1
10334	SVOCs 625	EPA 625	1	15198WAI625	07/21/2015 12:03	Linda M Hartenstine	1
08108	625 Water Extraction	EPA 625	1	15198WAI625	07/19/2015 20:10	David V Hershey Jr	1
07051	Chromium	SW-846 6010B	1	152081848002	07/28/2015 16:29	Eric L Eby	1
07055	Lead	SW-846 6010B	2	152081848002	07/28/2015 16:29	Eric L Eby	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	152021848002	07/22/2015 09:04	James L Mertz	1

Sample Description: MW-30_20150715 Grab Groundwater
Sunoco M.H. (RCRA)

LL Sample # WW 7969629
LL Group # 1577505
Account # 16657

Project Name: Marcus Hook RCRA

Collected: 07/15/2015 09:34 by C

Stantec
1060 Andrew Drive
Suite 140
West Chester PA 19380

Submitted: 07/16/2015 19:00

Reported: 07/31/2015 07:16

MHR30

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	2	152081848002	07/28/2015 05:46	James L Mertz	1
00237	Total Cyanide (water)	EPA 335.4	1	15205102101B	07/27/2015 12:37	David A Seavey	1
00492	Cyanide Water Distillation	EPA 335.4	1	15205102101B	07/24/2015 13:09	Jonathan T Tomayko	1
00612	SGT-HEM (TPH)	EPA 1664A	1	15209807801A	07/28/2015 17:28	Michelle L Lalli	1

Sample Description: MW-40_20150715 Grab Groundwater
Sunoco M.H. (RCRA)

LL Sample # WW 7969630
LL Group # 1577505
Account # 16657

Project Name: Marcus Hook RCRA

Collected: 07/15/2015 13:55 by C

Stantec

1060 Andrew Drive

Submitted: 07/16/2015 19:00

Suite 140

Reported: 07/31/2015 07:16

West Chester PA 19380

MHR40

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	EPA 624	ug/l	ug/l	
10371	Benzene	71-43-2	40	0.9	1
10371	Ethylbenzene	100-41-4	N.D.	0.8	1
10371	Toluene	108-88-3	15	0.8	1
10371	Xylene (total)	1330-20-7	2 J	0.9	1
GC/MS	Semivolatiles	EPA 625	ug/l	ug/l	
10334	Acenaphthene	83-32-9	N.D.	3	10
10334	Anthracene	120-12-7	3 J	2	10
10334	Benzo(a)anthracene	56-55-3	4 J	2	10
10334	Benzo(a)pyrene	50-32-8	N.D.	3	10
10334	Di-n-butylphthalate	84-74-2	N.D.	5	10
10334	Chrysene	218-01-9	N.D.	2	10
10334	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	9	10
10334	Fluorene	86-73-7	N.D.	3	10
10334	Naphthalene	91-20-3	5 J	2	10
10334	Phenanthrene	85-01-8	4 J	2	10
10334	Phenol	108-95-2	62	4	10
The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: phenol					
Metals	SW-846 6010B		ug/l	ug/l	
07051	Chromium	7440-47-3	69.3	1.5	1
07055	Lead	7439-92-1	150	5.1	1
Wet Chemistry	EPA 335.4		ug/l	ug/l	
00237	Total Cyanide (water)	57-12-5	N.D.	5.0	1
	EPA 1664A		ug/l	ug/l	
00612	SGT-HEM (TPH)	n.a.	N.D.	1,400	1

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/16.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10371	BTEX by 624	EPA 624	1	M151982AA	07/18/2015 08:29	Jason M Long	1
10334	SVOCs 625	EPA 625	1	15198WAI625	07/21/2015 12:26	Linda M Hartenstine	10
08108	625 Water Extraction	EPA 625	1	15198WAI625	07/19/2015 20:10	David V Hershey Jr	1

Sample Description: MW-40_20150715 Grab Groundwater
Sunoco M.H. (RCRA)

LL Sample # WW 7969630
LL Group # 1577505
Account # 16657

Project Name: Marcus Hook RCRA

Collected: 07/15/2015 13:55 by C

Stantec

1060 Andrew Drive

Submitted: 07/16/2015 19:00

Suite 140

Reported: 07/31/2015 07:16

West Chester PA 19380

MHR40

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07051	Chromium	SW-846 6010B	1	152081848002	07/28/2015 16:40	Eric L Eby	1
07055	Lead	SW-846 6010B	1	152081848002	07/28/2015 16:40	Eric L Eby	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	152021848002	07/22/2015 09:04	James L Mertz	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	2	152081848002	07/28/2015 05:46	James L Mertz	1
00237	Total Cyanide (water)	EPA 335.4	1	15205102101B	07/27/2015 12:38	David A Seavey	1
00492	Cyanide Water Distillation	EPA 335.4	1	15205102101B	07/24/2015 13:09	Jonathan T Tomayko	1
00612	SGT-HEM (TPH)	EPA 1664A	1	15209807801A	07/28/2015 17:28	Michelle L Lalli	1

Sample Description: MW-86_20150715 Grab Groundwater
Sunoco M.H. (RCRA)

LL Sample # WW 7969631
LL Group # 1577505
Account # 16657

Project Name: Marcus Hook RCRA

Collected: 07/15/2015 11:31 by C

Stantec

1060 Andrew Drive

Submitted: 07/16/2015 19:00

Suite 140

Reported: 07/31/2015 07:16

West Chester PA 19380

MHR86

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles EPA 624					
10371	Benzene	71-43-2	N.D.	0.9	1
10371	Ethylbenzene	100-41-4	N.D.	0.8	1
10371	Toluene	108-88-3	N.D.	0.8	1
10371	Xylene (total)	1330-20-7	N.D.	0.9	1
GC/MS Semivolatiles EPA 625					
10334	Acenaphthene	83-32-9	N.D.	0.3	1
10334	Anthracene	120-12-7	N.D.	0.2	1
10334	Benzo(a)anthracene	56-55-3	N.D.	0.2	1
10334	Benzo(a)pyrene	50-32-8	N.D.	0.3	1
10334	Di-n-butylphthalate	84-74-2	N.D.	0.5	1
10334	Chrysene	218-01-9	N.D.	0.2	1
10334	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	0.9	1
10334	Fluorene	86-73-7	N.D.	0.3	1
10334	Naphthalene	91-20-3	N.D.	0.2	1
10334	Phenanthrene	85-01-8	N.D.	0.2	1
10334	Phenol	108-95-2	N.D.	0.4	1
Metals SW-846 6010B					
07051	Chromium	7440-47-3	2.3 J	1.5	1
07055	Lead	7439-92-1	N.D.	5.1	1
Wet Chemistry EPA 335.4					
00237	Total Cyanide (water)	57-12-5	N.D.	5.0	1
EPA 1664A					
00612	SGT-HEM (TPH)	n.a.	1,900 J	1,400	1

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/16.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10371	BTEX by 624	EPA 624	1	M151982AA	07/18/2015 08:54	Jason M Long	1
10334	SVOCs 625	EPA 625	1	15199WAC625	07/21/2015 14:25	Linda M Hartenstine	1
08108	625 Water Extraction	EPA 625	1	15199WAC625	07/19/2015 21:15	Nicholas W Shroyer	1
07051	Chromium	SW-846 6010B	1	152081848002	07/28/2015 16:44	Eric L Eby	1
07055	Lead	SW-846 6010B	2	152081848002	07/28/2015 16:44	Eric L Eby	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	152021848002	07/22/2015 09:04	James L Mertz	1

Sample Description: MW-86_20150715 Grab Groundwater
Sunoco M.H. (RCRA)

LL Sample # WW 7969631
LL Group # 1577505
Account # 16657

Project Name: Marcus Hook RCRA

Collected: 07/15/2015 11:31 by C

Stantec
1060 Andrew Drive
Suite 140
West Chester PA 19380

Submitted: 07/16/2015 19:00

Reported: 07/31/2015 07:16

MHR86

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	2	152081848002	07/28/2015 05:46	James L Mertz	1
00237	Total Cyanide (water)	EPA 335.4	1	15205102101B	07/27/2015 12:40	David A Seavey	1
00492	Cyanide Water Distillation	EPA 335.4	1	15205102101B	07/24/2015 13:09	Jonathan T Tomayko	1
00612	SGT-HEM (TPH)	EPA 1664A	1	15209807801A	07/28/2015 17:28	Michelle L Lalli	1

Sample Description: Trip Blank Water
Sunoco M.H. (RCRA)

LL Sample # WW 7969632
LL Group # 1577505
Account # 16657

Project Name: Marcus Hook RCRA

Collected: 07/15/2015

Stantec

1060 Andrew Drive

Submitted: 07/16/2015 19:00

Suite 140

Reported: 07/31/2015 07:16

West Chester PA 19380

MHRTB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	EPA 624	ug/l	ug/l	
10371	Benzene	71-43-2	N.D.	0.9	1
10371	Ethylbenzene	100-41-4	N.D.	0.8	1
10371	Toluene	108-88-3	N.D.	0.8	1
10371	Xylene (total)	1330-20-7	N.D.	0.9	1

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/16.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10371	BTEX by 624	EPA 624	1	M151982AA	07/18/2015 06:48	Jason M Long	1

Quality Control Summary

Client Name: Stantec
Reported: 07/31/2015 07:16

Group Number: 1577505

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Batch number: M151982AA	Sample number(s): 7969627-7969632							
Benzene	N.D.	0.9	ug/l	91		80-120		
Ethylbenzene	N.D.	0.8	ug/l	95		80-120		
Toluene	N.D.	0.8	ug/l	97		80-120		
Xylene (total)	N.D.	0.9	ug/l	94		80-120		
Batch number: 15198WAI625	Sample number(s): 7969627-7969630							
Acenaphthene	N.D.	0.3	ug/l	99	100	83-117	1	30
Anthracene	N.D.	0.2	ug/l	102	104	75-116	2	30
Benzo(a)anthracene	N.D.	0.2	ug/l	101	106	76-117	6	30
Benzo(a)pyrene	N.D.	0.3	ug/l	97	107	84-111	10	30
Di-n-butylphthalate	N.D.	0.5	ug/l	101	106	84-116	5	30
Chrysene	N.D.	0.2	ug/l	110	112	81-118	3	30
bis(2-Ethylhexyl)phthalate	N.D.	1.	ug/l	107	109	84-116	2	30
Fluorene	N.D.	0.3	ug/l	102	103	80-116	1	30
Naphthalene	N.D.	0.2	ug/l	96	99	71-109	4	30
Phenanthrene	N.D.	0.2	ug/l	100	103	80-119	3	30
Phenol	N.D.	0.4	ug/l	63	67*	19-66	5	30
Batch number: 15199WAC625	Sample number(s): 7969631							
Acenaphthene	N.D.	0.3	ug/l	98	98	83-117	1	30
Anthracene	N.D.	0.2	ug/l	98	99	75-116	1	30
Benzo(a)anthracene	N.D.	0.2	ug/l	99	101	76-117	3	30
Benzo(a)pyrene	N.D.	0.3	ug/l	99	100	84-111	1	30
Di-n-butylphthalate	N.D.	0.5	ug/l	99	99	84-116	0	30
Chrysene	N.D.	0.2	ug/l	103	107	81-118	3	30
bis(2-Ethylhexyl)phthalate	N.D.	1.	ug/l	106	105	84-116	1	30
Fluorene	N.D.	0.3	ug/l	98	100	80-116	3	30
Naphthalene	N.D.	0.2	ug/l	90	87	71-109	3	30
Phenanthrene	N.D.	0.2	ug/l	98	98	80-119	0	30
Phenol	N.D.	0.4	ug/l	32	33	19-66	5	30
Batch number: 152081848002	Sample number(s): 7969627-7969631							
Chromium	N.D.	1.5	ug/l	102		80-120		
Lead	N.D.	5.1	ug/l	107		80-120		
Batch number: 15205102101B	Sample number(s): 7969627-7969631							
Total Cyanide (water)	N.D.	5.0	ug/l	100		90-110		
Batch number: 15209807801A	Sample number(s): 7969627-7969631							
SGT-HEM (TPH)	N.D.	1,400.	ug/l	66	66	64-114	1	18

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Stantec
Reported: 07/31/2015 07:16

Group Number: 1577505

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

<u>Analysis Name</u>	<u>MS</u> <u>%REC</u>	<u>MSD</u> <u>%REC</u>	<u>MS/MSD</u> <u>Limits</u>	<u>RPD</u> <u>RPD</u>	<u>BKG</u> <u>MAX</u>	<u>DUP</u> <u>Conc</u>	<u>DUP</u> <u>RPD</u>	<u>Dup</u> <u>RPD</u>
Batch number: M151982AA	Sample number(s): 7969627-7969632 UNSPK: P966817							
Benzene	98	100	83-132	2	30			
Ethylbenzene	102	103	82-124	1	30			
Toluene	104	105	84-123	1	30			
Xylene (total)	102	101	79-130	0	30			
Batch number: 152081848002	Sample number(s): 7969627-7969631 UNSPK: P970158 BKG: P970158							
Chromium	100	100	75-125	0	20	90.4	89.9	0
Lead	100	101	75-125	2	20	8.0	J 8.0	J 0 (1)
Batch number: 15205102101B	Sample number(s): 7969627-7969631 UNSPK: P968611 BKG: P968611							
Total Cyanide (water)	83*		90-110			N.D.	N.D.	0 (1)
Batch number: 15209807801A	Sample number(s): 7969627-7969631 UNSPK: P970251 BKG: P970251							
SGT-HEM (TPH)	65	60*	64-132	2	25	N.D.	N.D.	0 (1)

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX by 624
Batch number: M151982AA

	1,2-Dichloroethane-d4	Fluorobenzene	4-Bromofluorobenzene
7969627	104	98	102
7969628	103	99	100
7969629	102	98	101
7969630	103	98	102
7969631	102	98	103
7969632	102	98	101
Blank	103	99	101
LCS	100	99	98
MS	102	100	101
MSD	99	98	99
Limits:	78-118	88-107	80-118

Analysis Name: SVOCs 625
Batch number: 15198WAI625

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol
7969627	88	87	77	33	54	84
7969628	87	84	87	30	48	82
7969629	90	88	91	44	66	92
7969630	81	86	87	33	52	78
Blank	92	90	97	51	69	96
LCS	92	94	97	58	75	92
LCSd	97	96	98	59	77	91
Limits:	69-123	76-123	69-130	10-77	10-114	10-173

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Stantec
Reported: 07/31/2015 07:16

Group Number: 1577505

Surrogate Quality Control

Analysis Name: SVOCs 625
Batch number: 15199WAC625

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol
7969631	89	91	94	27	37	74
Blank	93	88	93	25	42	95
LCS	94	93	95	28	46	89
LCSD	90	92	97	30	48	86
Limits:	69-123	76-123	69-130	10-77	10-114	10-173

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	BMQL	Below Minimum Quantitation Level
N.D.	none detected	MPN	Most Probable Number
TNTC	Too Numerous To Count	CP Units	cobalt-chloroplatinate units
IU	International Units	NTU	nephelometric turbidity units
umhos/cm	micromhos/cm	ng	nanogram(s)
C	degrees Celsius	F	degrees Fahrenheit
meq	milliequivalents	lb.	pound(s)
g	gram(s)	kg	kilogram(s)
µg	microgram(s)	mg	milligram(s)
mL	milliliter(s)	L	liter(s)
m3	cubic meter(s)	µL	microliter(s)
		pg/L	picogram/liter
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Laboratory Data Qualifiers:

- B - Analyte detected in the blank
- C - Result confirmed by reanalysis
- E - Concentration exceeds the calibration range
- J (or G, I, X) - estimated value \geq the Method Detection Limit (MDL or DL) and the $<$ Limit of Quantitation (LOQ or RL)
- P - Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
- U - Analyte was not detected at the value indicated
- V - Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference...

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, ISO17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

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